The PELMAN SYSTEM *of* MIND *and* MEMORY TRAINING :: ::

LESSON

No. 3

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THE PELMAN SYSTEM OF MIND & MEMORY TRAINING

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LESSON III.

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THE PELMAN INSTITUTE
FOR THE SCIENTIFIC DEVELOPMENT
OF MIND AND MEMORY
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Supplement

The E.M. Health Exercises

LESSON III.

KNOWLEDGE AND THE SENSES.

1. Some of the exercises in the previous books have already begun the work of training the senses. We have given attention to sight and hearing, the chief sources of our knowledge of the world and all it contains. There is a memory belonging to the eye and another belonging to the ear ; forgetfulness is in a large measure due to defects in perception.

I. THE SENSES AND MENTAL EFFICIENCY.

2. We will now explain more fully the work of the senses in relation to mental efficiency. It will be well to begin by supposing that you are almost destitute of sense power ; that you cannot see or hear anything ; that your senses of taste and touch and smell are only moderately developed. Helen Keller's is a case somewhat on these lines, and Mr. Hall Caine has pictured such a possibility in his "Naomi," the heroine of "The Scapegoat." Not to be able to see or hear, and to be able to taste and feel (touch) inadequately, is to have a mind locked in from the outside world ; all, or nearly all, communications are barred. You would be dimly conscious of other people and things, but the delight of communion with them would be denied you—in fact, you might as well be walled up in a narrow cell in solitary confinement.

Let us suppose, however, that the sense of touch was fully restored to you. You could then know a great deal more about external things, their shape, their weight, their heat, and their coldness. The mind would have a considerable increase in data about which to exercise its powers, but the complete absence of the powers of sight and hearing would form an insuperable barrier against any further advance. Should another sense suddenly come—hearing, for instance—and act in conjunction with the taste, smell and touch already working, the outside world would become more and more real; voices would bring language into being; and that would bring communion with others. The advent of sight would redeem you entirely from your sense prison; you would come out into the normal state of ordinary human beings with senses alive to all the joys of social intercourse.

II. SENSATION AND PERCEPTION.

3. Hence, when we are asked the question "How do we get our knowledge?" the reply is "By means of the senses—chiefly sight and hearing." As to how the objective realities outside us—the sun, the earth, the cities, our friends, our business concerns, our recreations—become subjective—that is, realised in consciousness, we need hardly stay to inquire. As a matter of fact, nobody knows. But we do know that the *method* is by sensation and perception. Sensation has been described as "a state of consciousness resulting from nerve action"; and perception as "a power to interpret raw materials given by such sensations." The word sensation is capable of leading the mind astray

by its several associations. A newspaper reporter, in describing a scene in court where a witness makes a remarkable statement, will, at the end of the statement, put the word "sensation" in brackets, by which he means there was excitement in court. But the sensation referred to here is really the action of objects on any one of the five senses. For instance, I may look through my window and say: "I see a Red Indian in war paint and feathers coming down the street." The sensation itself is confined purely to what my eyes can see, namely a moving something totally different from every other moving something. Of course a sensation becomes a perception almost unconsciously; no sooner do I *see* the Red Indian than I *perceive* him and his differences from the other pedestrians.

Subconscious Action.

4. This point is important, because when we are asked to define the difference between sensation and perception, it is not easy accurately to apportion their respective functions in obtaining knowledge: the operation is as a rule too immediate—too rapid. But it is nevertheless possible to have sensations that do not at once become perceptions; or, if they do, the perceptions are so weak that they fail to live beyond the life of the moment. Thus, if we hear a clock striking, the sound acts on the nerves of hearing which in turn enable us to perceive the fact that the mantelpiece clock is chiming the hour. If, after paying no particular attention to the number of strokes, we ask "What hour did it strike?" it is sometimes possible to tell exactly the number of strokes by consulting the record in our subconsciousness. This record of sensations of sound is kept for a few moments—subconsciously—by the registering power of the mind; and although the striking

of the clock was immediately perceived, full perception of the number of sounds was not instantaneous. But, for the bulk of daily experiences, it may be taken for granted that sensation and perception act together with a rapidity that makes their separate action a matter of very close analysis. On the other hand, one may see and hear a great deal without comprehending it; and this vagueness of the life of sensation and perception is responsible for much mind-wandering and bad memory.

Fortunately, it will not be necessary to trouble ourselves with minute questions respecting the physiology of the senses, and how nerves are the paths by which knowledge is communicated to the mind. Our point of view is restricted to the psychology of the senses, that is to say, we desire to know how they work in general, and how they may be trained for the cultivation of the mind with a view to securing all-round efficiency.

III. ANIMAL AND HUMAN SENSES.

5. Before commencing the serious study of this question, it may be well to compare human senses, which we believe mankind has developed to a high degree, with some of the surprising degrees of sense acuteness evinced by the lower animals and birds. The mole is supposed to be almost a voiceless animal, and yet the weasel, one of its deadliest enemies, can hear the purring noise a mole makes even though several inches of earth separate the two animals. One can pass by the remarkable powers of scent displayed by the bloodhound as being too familiar for further notice. The thrush displays abnormal ability—that is, from our point of view—to hear sounds which to the most highly trained of human ears

are inaudible. You can see a thrush stand perfectly still on the lawn, cock his head and listen intently, then make a couple of steps, dig in the ground, and haul out a fat worm. To be able to hear a worm moving underground, and to locate it by the noise, suggests a fineness of hearing which we can only imagine.

Relative value of the Senses.

6. In connection with this touch of natural history, it is somewhat striking to note that the relative value of the senses seems to have undergone considerable change during the process of time. The first forms of life were almost necessarily determined by the sense of touch—the Protozoa, for instance—and we cannot deny that even in the human child of to-day touch is one of the first senses to contribute to knowledge. A child will hold an article in its hand and apparently realise it without looking at it. It will grip its mother's finger and yet take no notice of the mother herself. If there is a real order of sense development, we should say that the order is touch, sight, sound, taste, smell, whereas, in natural history, animals of all kinds seem to have developed in this order: touch, smell, taste, sound and sight. The question of order, however, is not so important as the one just intimated, namely that of relative value.

Priority of Sight and Hearing.

It has been pointed out that taste and smell are inferior to the other senses, because they introduce us to a smaller range of interests; they are not so certain on account of their relative nature: for instance, a moderately sweet drink is hardly sweet at all if we have just partaken of a very sweet drink; and there is apt to be confusion between smell and taste. You have possibly heard somebody say, "This *tastes* like

musk *smells*." It must be admitted that for all ordinary purposes, as well as for business life, sight, and hearing, and touch, are the most important senses, and of these we should place sight and hearing ahead of touch, and of sight and hearing we should place sight first of all. It is usually assumed that a man who has lost other senses and retained his vision is in a better position to prevail over difficulties than a man who has lost his sight but retained all the other senses unimpaired. This plea at any rate must justify the selection of observation as the first of the powers to receive systematic treatment in these pages, but before setting out on that analysis, we should like to commend to the student who loves to carry his reflections a little deeper than usual the suggestive sentence of a writer on perception. He says, "Matter *is;* the plant *is* and *lives;* the animal *is*, *lives* and *perceives*." To this one might well add: "Man *is*, *lives*, *perceives* and *knows*"; and the extent of his knowledge is largely determined by the extent and accuracy of his perceptions. We remember well that which we have "known" well, and we know well that which we have "sensed" well.

IV. THE VALUE OF EFFICIENT SENSES.

7. The importance of training the senses may be explained in the following way. When sensations are weak or inaccurate, our knowledge also will be weak and inaccurate, from which it follows that memory also will be confused; thus, the order of values is that a good memory depends on good knowledge, and good knowledge depends on good sensations and perceptions.

The range of your knowledge and memory depends largely on the range of your sense life.

A hermit who for years has been out of touch with civilization may have developed his reflective powers to some extent, but he has unfitted himself for work in the busy scenes of modern activity. He has a very small store of perceptions, impressions, facts and ideas to draw upon ; consequently his intellectual poverty is one of the most outstanding of his characteristics, just as his devotion to a few principles may be another, unless, like Kant, he closes his eyes to see.

V. THE VALUE IN CULTURE AND ART.

8. The values of sense training are mainly (1) educational, in the form of culture, and (2) financial. All the geniuses of the world have been marked by comprehensive vision of the facts involved in the line of thought or action which they have espoused, whether art, literature, utilitarian invention, or military might. It is recorded of Whistler that he was most exacting in the care with which he trained his observational powers. One of his biographers says :— "I shall never forget a lesson which he gave me one evening. We had left the studio when it was quite dusk, and were walking along the road by the gardens of Chelsea Hospital, when he suddenly stopped, and pointed to a group of buildings in the distance, an old public house at the corner of the road, with windows and shops showing golden lights through the gathering mist of twilight, and said, 'Look !' As he did not seem to have anything to sketch or make notes on, I offered him my note book ; 'No, no, be quiet,' was the answer ; and after a long pause he turned and walked back a few yards ; then, with his back to the scene at which I was looking, he said, 'Now see if I have learned it,' and repeated a full description of the scene, even as one might repeat a poem one had learned

by heart. Then he went on, and soon there came another picture which appealed to me even more than the former. I tried to call his attention to it, but he would not look at it, saying, 'No, no, one thing at a time.' In a few days I was at the studio again, and there on the easel was the realisation of the picture."

"This incident, which illustrates his capacity for rapidly taking in a subject as a whole and retaining the impression until he could realise it in painting, seems to throw a considerable light on the aim of much of his work, and to reveal in no small measure the secret of its charm."

VI. "FORM" MEMORY.

9. The same is true of Rembrandt. At the age of 24, he did not possess sufficient knowledge to draw animals or figures from memory with the correctness to make them convincing; and to remedy this he practised observation exercises, coupled with a vigorous use of the pencil—hence the existence of numerous studies of beggars and models. And yet, in spite of this constant practice, years elapsed before Rembrandt had mastered his details so completely that it became impossible to tell whether a figure in his work was drawn from a model or from memory. The biographies of men of thought and men of action could be quoted by the dozen to emphasise the educational value of keen observation.

VII. ON OBSERVATION.

10. Take Robert Browning's case. His biographer says: "It is interesting to know that many of the nature touches were indirectly due to the solitary rambles, by dawn, sundown, and 'dewy eve,' in the wooded districts south of

Dulwich, at Hatcham, and upon Wimbledon Common, whither he was often wont to wander and to ramble for hours. . . . . .

"I have heard him say that his faculty for observation at that time would not have appeared despicable to a Seminole or an Iroquois; he saw and watched everything—the bird on the wing, the snail dragging its shell up the pendulous woodbine, the bee adding to his golden treasure as he swung in the bells of the campanula, the green fly darting hither and thither like an animated seedling, the spider weaving her gossamer from twig to twig, the woodpecker heedfully scrutinising the lichen and gnarled oak-bole, the passage of the wind through the leaves or across grass, the motions and the shadows of the clouds, and so forth. . . . . He never forgot the bygone sunsets or great stars he saw in those days of his fervid youth. Browning remarked once that the romance of his life was in his own soul; and on another occasion I heard him smilingly add, to someone's vague assertion that in Italy only there was any romance left: 'Ah well, I should like to include old Camberwell.'" Browning thought that romance still clung to his birthplace because his youth was trained there in the right way.

Burroughs says of Tennyson: "A lady told me that she was once walking with him in the fields when they came to a spring that bubbled up through the shifting sands in a very pretty manner, and Tennyson, in order to see exactly how the spring behaved, got down on his hands and knees and peered a long time into the water. The incident is worth repeating as showing how intently a poet studies nature."

VIII. SENSE VALUES IN £ s. d.

11. We said the value was also financial. If you go through life with trained senses, enabling

you to hear more and see more than the average man, as inevitably you will do if you follow out the Pelman System conscientiously, you not only fill the treasure house of your inward resources, but you have at hand agencies on which business men have agreed to place a worth amply represented in £ s. d. Nothing is so annoying to an employer as inaccuracy on the part of his staff due to want of attentive observation of detail. A young man is sent to a job with some message for the foreman. When he comes back, his employer asks him, as he opens the foreman's answer, how they are getting on with the plastering and whether they have done the second coat yet. He doesn't know. He didn't notice. How different the impression made on the employer's mind by a young man who could tell him promptly that they had done the second coat on all but the ground floor.

Training Left to Chance.

Now the man who did not notice in a case like this may be in reality a very decent fellow, only he has never taken the trouble to train his senses; he has never realised the importance of so doing. And what is true of him is true of thousands of other people. They leave this important matter of training to the chances of experience and to such inward urgings as they may by nature possess. To speak plainly, this is quite an unscientific outlook. In spite of all our boasted love of science, we never seem to apply that science to our own development. We seem to think that we see everything that is worth seeing, and hear everything that is worth hearing, and that these two leading senses never call for the attention of practised discipline. In this, we are grievously mistaken, and the student

may congratulate himself that, in taking up this course of training, he has made an investment that in pure educational worth and practical business value will pay him a dividend of one hundred per cent., because it introduces him to the scientific method as applied to the training of mental faculty. It is the trained mind that wins always and everywhere.

Train Separately: Use Unitedly.

12. In one way all the five senses may be trained together. Thus, if you take a walk and on returning try to remember everything that has appealed to your senses, you are reproducing sights, sounds, odours, and sensations of touch, but in a special manner you are training mind and memory by means of reproductive imagination, both of which have obtained their material through the medium of vision. In practical work, however, it is found best to train the senses separately, and the method of securing this separate and individual training of the senses is an important point in laying the foundation of mental culture. After you have carefully examined a coin about which you are doubtful, and found that it has all the appearance of being genuine, to the eye at least, you call in the aid of the sense of hearing by ringing the coin on the table to compare its sound with your recollection of the true ring; but this is no argument that proves you must educate the senses together, any more than when you examine a piece of cloth to see that it is all wool you do not trust to your sight alone, but run your fingers along the edge to compare it with your recollection of the peculiar feeling of pure wool. To *use* the senses together is one of the precautions necessary to obtain accurate knowledge, but the more highly developed each sense is, the better it is as a guide to facts. And this development

can only come about by training the sense in isolation from other senses—at any rate as much as possible. The formula may be stated: "Train separately; use unitedly."

IX. TWO INTERESTING CASES.

13. The value of a trained eye has often been referred to, but we are in constant need of a reminder, every one of us, without exception—the student, the business man, even the woman who goes shopping. Halleck says a lady went into a certain shop to buy a lace collar. It so happened that none but the cheaper grades were in stock, and these did not suit her. The tradesman soon saw that she could not tell the difference between a fine and a coarse grade, or a machine or a hand-made article, so he kept making new discoveries in his stock and raising the price each time. He noticed that she was better pleased as the price rose, so he sold her "a fine imported" specimen at £2 10s., which was nearly £2 more than he had at first asked her for the same quality of goods. This was a case where careful inspection would have detected the fraud.

The Buyer's "Eye."

14. One reason why some uneducated men are so successful in business is because they are such excellent observers. Instead of poring over books, these men, moving around the busy world, learn facts first hand. The head of a large firm, when asked why he employed such an ignorant man for a buyer, replied, "It is true that our buyer cannot spell correctly, and he has probably never read a book through, but when anything comes within range of his eyes he sees all there is to be seen. He buys over £200,000 worth of goods a year for us, and I cannot recall a single instance when he failed

to notice a defect in any line, or any feature, which would be likely to render them unsaleable. I shall never put in a bookish man as a buyer, because he will never see anything unless a book first points it out to him." This business man's verdict was the result of observation, which, he said, was superior to theory. While there is nothing that forbids a proper combination of books and a use of our senses at first hand, such a combination is too seldom encountered.

Observation in detecting crime.

15. During the last twenty years we have seen great advances in the science and art of tracking criminals. "Systems" have been formulated for this purpose; the anthropometric method of Bertillon was at one time used in every country.

Sir Edward R. Henry's finger-print method and the Gross system are later in the field and apparently much more effective than the Bertillon system. Professor Hans Gross, of the University of Gratz, brings into action every possible item of knowledge that may be involved in the crime; he claims to be an expert in all the methods of lawbreakers, using for his work a profound knowledge of languages, photography, medicine, biology, bacteriology, chemistry, trades, and human life generally.

Correct Inferences.

But the basis of his whole system is keen and accurate observation plus the power to draw correct inferences. Let us take some instances. How does a prisoner sham deafness when he fears an acute cross-examination? He never even winks when a heavy weight is suddenly dropped behind him. His cleverness is his undoing; for a deaf man would wink and even turn round, the heavy vibrations alone telling him something had fallen.

A suburban house had been broken into and many things stolen. The thieves, in order to throw the police off the track, had caused foot marks to be imprinted on the soft soil of a flower bed. There were signs of four different people, one of them a woman. The detectives saw very soon that these footprints were intentional; the man who used the woman's shoes *had walked with a man's stride.*

Again, a suspected thief was being examined on a charge of having robbed a flour mill. The mud on his shoes was the means of convicting him; for there were two layers of mud on them with a thin layer of flour between!

X. ACCURACY AND SPEED.

16. There are two elements in the power of observation, one of which is accuracy and the other is speed. It is necessary to look at some things very carefully in order to be sure whether or not they move, or whether or not they change colour. Sometimes, a very close inspection of material is necessary in order to discover defects. All these operations depend on accuracy in noticing difference and agreement, and this accuracy is the direct result of attention. One of the first, and also one of the most difficult things in *training* the senses is to separate the action of one from another—for instance to keep sight distinct from hearing. Let us suppose that you want to remember the telephone number, Museum 625. Until you have, by considerable practice, trained sight and hearing to work in perfect co-operation you should entrust the task to the mind through the better developed sense. Thus, if your memory is better for visual impressions you should look well at the telephone number in print or in your own handwriting; or imagine that you see it. If, on the other hand, you remember what you hear better than what you see, you should

repeat aloud several times "Museum 625." Later, when you have trained the senses to work together, you should combine both impressions.

17. Each sense plays its part in the problem of memory. According to the relative development of their senses, some persons remember most easily those circumstances presented to their minds through the sense of sight, while others more readily remember through impressions of sound. Often the memory of individuals is keenly responsive to the senses of touch, smell, and taste, but these are of less general utility in ordinary every day life. In many cases what may be termed the sense memory is weak but a strong ratiocinative memory exists —that is, a memory depending upon the intellectual faculties alone and dealing with ideas through processes of reasoning, remembering them by their relationship of cause and effect, of whole and part, or by kindred associations which will be explained in Lesson IV.

The Deficient Sense.

18. There are very few people who have an equally good memory for sights and for sounds; therefore it is necessary that *the sense which is deficient should be developed.* The natural tendency is to put all the work on the sense which seems to do it the more easily, and this, of course, works to the detriment of the other faculties, which should be compelled to bear a share of the burden. The student must, therefore, be able to use any one sense to the full, but he should also be able to compel other senses to assist in acquiring exact knowledge and in memorising in. For instance, if you find it difficult to remember anything in writing or in print, try reading it aloud to yourself, taking note not only of the meaning of the words but also of their appearance, their relative position on the paper, and their actual sound. You will

thus be sending to the brain at the same time a visual impression and an aural impression (both being physical impressions), and with them you will also be uniting a more mental impression of the meaning of what you are studying. By mental impression we mean the result of reflection on the material supplied by the senses. Thus, a boy may have a poor memory, *naturally*, but as a stamp collector he can identify thousands of stamps, and assign their values, because his physical or sense impressions have been strengthened by the mental impressions arising out of his love for philately.

XI. HOW TO REMEMBER NAMES AND FACES.

19. "My memory for names and faces has brought me quite a lot of money," said a New York man one day as he stood in his store. "Two years ago I was introduced to a Mr. Brown at Omaha. I saw him for just one minute. Yesterday morning he opened my office door and I recognised him instantly. 'Good morning, Mr. Brown,' I said, 'how are you and all the friends in Omaha?' He seemed quite staggered—he expected it would be necessary for him to recall our meeting. Of course he was all the more pleased that I saved him the trouble, and I sold him more goods than if I had failed to locate him, or worse still, *pretended* to and bungled it. Yes, I tell you, memory is money. *I always look for a distinguishing mark*, as well as try to get a general impression. Brown has a blue mark on the bridge of his nose and his eyes are fiery."

"Of course you practised a good deal?"

"Yes. And now I never forget a face—once I have really *seen* it."

The key to the whole position is found in the last phrase "never forget . . . really *seen* it." He really *noticed* it.

Names by Sound: Faces by Sight.

20. The great difficulty in remembering people's names arises from the fact that the name is a "hearing" while the face is a "seeing." We have little or no difficulty in remembering names that we are in the habit of seeing, especially when they are usually presented to our attention in immediate connection with the face to which they belong. The faces used in magazine advertisements, for instance, are always associated with the name. We are in the habit of seeing both together; they have been presented so often to the mind as ideas of equal strength, that they have been blended into one idea, and either the name or the face instantly recalls the other. Names of famous persons, which are continually before us in the newspapers, are easily remembered, because we have the visual memory of them to help us. We seldom forget the names of persons with whom we correspond, because we are familiar with the visual appearance of the written name, and it has gradually blended with the general memory of the person to whom it belongs. It is the names that we never see written or printed that we forget; the names of people just introduced to us, or whom we meet casually in society or business. Whenever you find yourself unable to recall the name of a person that you have met dozens of times, if you will think it over, you will usually discover that it is a person to whom you have never written, and whose name has never been to you anything but a sound.

Sound and Spelling.

21. In order to bring the sight memory of a face and the sound memory of a name into the same class, to establish some connection between them, and that one shall recall the other, *the student should concentrate his efforts chiefly upon paying attention to the name when he hears it.* Let him ask how it is spelt if he does not know. He should also pronounce it aloud, paying particular attention to the spelling and to any peculiarities that the name suggests. Every time you think of a person, be sure to recall the name at the same time, and mentally spell it. Every time you meet a person whom you know, recall the name, even if it is not necessary to address him by it ; and, in recalling it, try to get the visual memory of it, or spell it to yourself.

22. The most important thing is to pay attention to the name upon the first introduction. Many persons are singularly careless in this respect, and do not really hear the names. They are under the impression that it is impolite to show a desire to have the names repeated. This practice allows the sight impression of the person to be so much stronger than the sound impression of the name that the ideas do not blend. The stronger completely obliterates the weaker. In order to cure yourself of this habit, if you have contracted it, try for a while to get a stronger impression of names than of faces, when you meet people for the first time ; and, above all, do not forget to turn the name into a visual memory if you can.

"DON'TS"

1. Don't say "My senses are naturally keen" until you can work all the exercises with speed and accuracy.

2. Don't undervalue Perception in this system of mental training. Genius has unusual perceptive power as one of its primary characteristics.

3. Don't train in *your* way: follow ours. It is based on years of experience.

4. Don't worry if progress is slow at first. Proficiency is simply a matter of time.

5. Don't forget to adapt the Perception Exercises to the needs of your calling.

6. Don't work moodily in the spirit of "I—suppose—I—must." Keep cheerful and press on.

23. The exercises up to the present have had the object of training the perceptive powers in a general sense with a view to the acquisition of *accuracy and speed.* Of course the notion of *comprehensive vision*, i.e., seeing and hearing all that is worth while, has not been forgotten, but emphasis has been laid on the difference between *mere seeing* and *real observing.* The oft told story of the professor who undertook to show his pupils the difference between these two visual acts may perhaps bear a repetition. Taking a graduated glass he filled it with a certain liquid. He then inserted a finger in the liquid, and afterwards in his mouth. The pupils were requested to file past the table, accurately to repeat his action, and return to their seats. They did so; each man receiving from his finger, in restrained silence, a horrible dose of asafoetida, which he was careful to see his successor should not miss. When the class had all resumed their seats with pallid faces and sinking stomachs, the professor after scanning them sadly for a moment, remarked, with a weary smile: "Gentlemen, you did not *observe* that the finger I put in the graduated glass was not the finger I put in my mouth."

We shall now introduce some more advanced exercises, quite as interesting and profitable as those which have already been given. We shall also begin a series of exercises in imagery, and practical thinking.

Exercise IX.

The ideal of efficient sense perception is not merely to perceive completely under test, or special conditions, but to do so under normal conditions. For this, your senses must be in a state of perpetual efficiency so that you are

always observing well. There are two ways of finding this out. One is with old objects and the other is with new ones. Very few men can remember the shape of their own door knockers which they see every day. Very few women can remember the design of their pendants which they wear every day. They see the door knocker or the pendant but their senses are not efficient. With reference to new subjects —you had an interview with Mr. Lee of the Cape Linen Co. yesterday. Can you remember the details of his face, the colour of his eyes, the cut of his clothes, the tone of his voice, the table, the room, or many other of the thousand and one things which your senses sensed? You can remember very few; again because your senses are not efficient.

Study Details.

Think of three objects which you see daily—your breakfast table, the face of a friend, a certain stationer's shop or a building. Make a daily practice, before going to bed, of seeing in your mind these three objects with as much detail as possible. Gradually you will know them so well that if you describe the details to some friends they will be amazed at your complete observations. As time goes on, increase the number and variety of objects so observed, until nothing with which you come in daily or frequent contact escapes your eye. The value of all this is twofold. You will have an enormous treasury of observational material; and your senses will have reached a very high state of efficiency, in which they will be of very considerable use to you in observing any new objects which you must remember.

Exercise X.

Analyse some object *very closely*. This was the method of Agassiz in training the perceptive

faculties of his pupils. One morning, to a new student, he said, "You are to look at this fish carefully, and tell me when I return how much you have seen. You must not cut it nor use any instrument upon it." Halleck, who tells the story, says the professor left the student alone with the specimen. The student had seen fish before. He knew that they were oblong objects with fins and scales, but he looked at that special fish for ten minutes. He was then sure that he had seen all that was possible from the outside, and he desired to tell the professor so. The museum was carefully searched, but the thoughtless instructor had left the building. There was nothing for the disgusted student to do but to return to stare at the uninteresting fish, feeling that his time was too valuable to be wasted in this way.

Apparent Failure.

He nevertheless looked at the fish for a half hour without seeing anything. Then he turned the fish over. He looked it in the face; he gazed at it from above, below, behind. Two hours passed and he was inexpressibly disgusted. He knew that it was a fish; he was sure of that before he came to the great Agassiz.

The student then left the fish in the jar and went to lunch. When he returned he found that the professor had been there and gone away somewhere to remain for several hours. It seemed strange that such a man should be wanted for a teacher. Again the disgusted student stared at the fish. This was growing tiresome, and to amuse himself, he began to count the scales. Feeling that this was nonsense, a happy thought struck him, and he proceeded to draw the fish. He had just made the interesting discovery that the fish had no

eyelids, when Agassiz returned and remarked that the pencil was the best of eyes. He asked the student to tell him what he had seen, and looked disappointed at the recital. "You have not looked very carefully; keep on looking," said Agassiz, who then left the room.

Use a Pencil.

24. The student then went to work with a will, and with his pencil: he began to make discoveries, and to wonder how it had been possible for him to see so little at first. For three long days he was made to gaze at the fish. Agassiz would occasionally return to listen to a recital of new discoveries, but would answer no questions. In after years the student said: "That was the best zoological lesson I ever had, a lesson whose influence has extended to the details of every subsequent study; a legacy the professor left me, as he left it, to many others, of inestimable value, which we could not buy, but with which we cannot part."

If Agassiz had been an interior teacher, he might have been afraid of being charged with wasting his pupil's time, and *he might have answered questions which the pupils should have asked their own senses alone.*

The grasshopper is to most persons merely an oblong insect capable of jumping. Agassiz's pupils say that after he had compelled them to find out a world of interesting matter about it, they would sometimes go to hear him deliver a popular lecture. They noticed that the audience became as much interested in the grasshopper as if they were reading a romance.

Analysis in Business.

This method of close analysis is of high commercial importance. We have known of cases

where minute investigation of a commodity supposed to be perfect has revealed defects, which, when remedied, greatly increased the utility of the article, and naturally increased its selling price.

These sight training exercises are not outlined in the belief that they represent finality, but they contain basic principles of method which are capable of an almost infinite number of variations. The discovery of these variations is in itself a pursuit both attractive and profitable, and we would recommend it to the student's earnest attention. We know from years of experience that the conscientious observance of such exercises as are found in this lesson is certain to produce not only a vast amount of detailed and accurate information, but a facility for noticing things, which, on its real side, is more often than not equivalent to hard cash, and on its ideal side is a most invaluable contribution to culture.

A Doctor's Training.

25. Below we give an example of the way in which an M.D. (Glasgow) student of the Pelman Institute adapted the principles of perception to his own professional needs.

I. *Examine the Tongue.* A brief observation should enable one to note :—

(*a*) the shape and colour, and whether the surface is dry or moist,

(*b*) whether it is protruded in a straight line,

(*c*) the presence or absence of fur, and the character of the papillæ,

(*d*) whether or not the tongue is tremulous ?

II. The artist, and the student of Medicine, will find it useful to observe any anatomical peculiarities. For example, the shape of the head and face offers much scope for observation.

(*a*) is there any want of symmetry in the head ?

(*b*) are the two sides of the face alike ?

(*c*) what is the facial angle ?

(*d*) are there any peculiarities in the shape of the ear, or in the manner in which it is united to the head ?

III. On a patient being announced, glance at him and state :—

(*a*) the build ; spare, medium or full habit ;

(*b*) observe his manner of walking : does he walk straight, or does he tend to deviate ? If his gait is abnormal, would you classify it as :

spastic ?

ataxic ? or

reeling ?

An acute observer will be able to write fully on all these points after a momentary glance.

IV. *On shaking hands*, a careful observer should note instantly :—

(*a*) the strength of the grip,

(*b*) any clamminess or heat,

(*c*) tremor,

(*d*) shape, stunted, spade-like, joints large, enlargement of the finger ends?

V. *His manner of speech.* Is it :—

(*a*) scanning,

(*b*) lolling,

(*c*) slurring,

(*d*) syllable stumbling ?

VI. *The eye.* A glance should suffice to determine :—

(*a*) whether the pupils are equal or not,
(*b*) the condition of the Sclerotic (jaundice),
(*c*) whether or not Ptosis is present ?

VII. *The face* :—

(*a*) is the skin dry or smooth,
(*b*) undue pallor or redness,
(*c*) any want of symmetry,
(*d*) when he smiles is there any sign of paralysis ?

Exercise XI.—Ear Training.

26. (*a*) The human voice offers an unusual opportunity for training the sense of sound by providing a great number of inflections, tones, half-tones —all of them indicative of change in feeling and thought on the part of the speaker. To study the voice in relation to character is therefore a fine exercise in both hearing and judgment.

Why are some voices so disturbing, and others so restful ?

Why are some so irritatingly monotonous ?

How would you classify voices ?

Such questions, which you can ask yourself as you listen, may take you a considerable distance in the science and art of reading character.

(*b*) 1. Ask a friend to give you verbally the telephone numbers of three people known to him ; then try to repeat the three (1) immediately after hearing them ; (2) five minutes after hearing them.

2. Ask your friend to give you a few verbal orders one day with the object of your reproducing these orders the next day, without having committed them to paper during the intervening period.

Thus :—

"Send a complete set of Dickens' works to :
Adam Smith,
Manor Lodge Road,
Sevenoaks, Kent.

and write to Judge, requesting him to forward for inspection the Diodati New Testament."

The orders may be varied in many ways, but as long as the rules laid down are carried out, the details of the orders are of no consequence.

If a friend's help is not available, try to recollect a conversation or a remark heard on the previous day : or listen to a lecture and write down afterwards the most striking sentences.

XII. MEMORY TRAINING.

Recalling Lost Ideas.

27. It is a common experience for every one to lose a train of thought ; to forget what one was about to say or do ; to forget a question one wanted to ask. When you find yourself off the track, as it were ; when you find that the train of thought has gone astray, either through outside interruption, or because some idea of your own has turned it aside; do not go floundering about trying to hit upon the place where you should be, because you are very probably only going further afield, when what you want

to do is to get back to where you came from. It is like taking the wrong fork in the road. If you do not know on which side of you the right road lies, you lose valuable time in trying to find it by cutting across the fields. It is better to go back to the fork.

It is precisely the same with a lost train of thought. Suppose you are about to say something to a person and are interrupted. When the opportunity comes to say it, you cannot recollect what it was that you wanted to say. The usual way out of the difficulty is to think hard, hoping you will be able to hit upon it. But there may be no connection whatever with what you are thinking about now and what you want to recall. *You must go back to the fork in the road.* Go back to something that you know you were thinking about either at the time, or just before the idea occurred to you which you want to recall. If you can think of something that was said just previously, you will find it very easy to pursue the same course of thought again, and you will readily reach the idea that you have lost.

The Lost Association.

Sometimes a thing will occur to you under certain circumstances ; for example, something that you want to attend to. A minute afterwards you cannot recollect what it was. Go back over the circumstances of the past few minutes, and you will usually find it. A man had promised to buy his little girl a skipping rope. Walking along the passage to a friend's office he thought of it, and determined to make a note of it the moment he got back to his own room ; but on regaining his desk, he could not remember what it was that he wanted to make a note of. He simply went over the ground again, walking

to his friend's office, and as he went he saw a piece of twine on the carpet, which had recalled the skipping rope in the first place.

Momentary Forgetfulness.

28. If a speaker loses the thread of his discourse, all that is necessary is to go back to some part of it which he knows he has delivered, and mentally run over the ground again from that point; he will infallibly follow it until he reaches the place where something distracted his attention or interrupted his train of thought. If an idea occurs to you in general conversation, and you cannot speak of it immediately, always observe carefully the circumstance or object which suggested it, and, when your chance comes to talk, you can recall your idea, no matter how foreign it may be to the subject to which the conversation has since drifted. Some authors are so afraid of losing ideas that come to them unexpectedly in general conversation, that they will pull out a note-book and put them down at once, much to the amusement of their companions. This would be unnecessary if they would simply impress on their memories the circumstances that suggest the idea. The comparison, the action of the mind upon the connection between the two things, would fix the recollection safely. Thus, it is one thing to originate ideas, or to receive them more or less passively from such quarters as those whence our ideas generally come; it is another thing to remember them, and we would like the student to recall the expression used a moment ago about "the fork in the road," because it brings us into contact with the laws of association. Every writer on mental science has a good deal to say about these laws; they have divided and subdivided them, and they have illustrated them with great wealth of

detail ; but the Pelman Institute has rendered signal service to all students by illuminating the matter in such a way as to make knowledge easier of attainment and retention.

XIII. THREE MENTAL LAWS.

The Law of Contiguity.

29. The first law is *the law of contiguity*. For instance, if you think of the name, John Milton, you almost instantaneously think of the words "Paradise Lost," because the name and the book are contiguous in your consciousness, just as when you think of lightning you almost necessarily think of thunder. Similarly, two ideas may be revived together in your brain because they are connected by circumstances. You may have heard a man say, "I never think of soup but what I think of the Prime Minister"—the connection being this: that your friend Simpkins was discussing the Prime Minister when the waiter spilled the soup over his dress-suit. Halleck says: "The facility with which we remember things will depend largely upon the way in which we associate them." An intelligent use of the law of contiguity will aid the memory. Suppose we wish to remember when Sophocles, Plato, Alexander the Great, Socrates, Aristotle, Philip of Macedon, Euripides, Demosthenes, and Herodotus lived. If we tried to remember them as so many isolated individuals we should have hard work. It is unnecessary for us to select more than one date to be learned outright—470 B.C., the birth of Socrates. He was the instructor of Plato and of Aristotle ; Aristotle of Alexander the Great. Philip of Macedon was the father of Alexander. Against Philip, Demosthenes delivered his noted orations, called Philippics. Between 500 and 470 B.C. were

born Sophocles, Euripides, Herodotus, Thucydides, hence all were contemporaries of Socrates. The birth of Euripides and the battles of Thermopylae and Salamis occurred in the same year, 480 B.C., while the battle of Plataea was fought the year after.

Recall by Thought-Relations.

30. One of the great beauties of a trained human mind is that it recalls things preferably by thought-relations, and is not enslaved by the accidents of time and place. An ignorant person on the witness stand will insist on telling everything, no matter whether it bears on the case or not. His memory is entirely contiguous. If, between two given events he bought a barrel of flour on trust at a grocery, one of his children was teething, or he blew his nose, he must relate the events in the order in which they occurred. Having never learned to think logically, he really has no other way of getting from the one event to the other, except by using everything that happened as a stepping stone wherewith to cross the intervening stream. Deny to him the right of using a certain stone, and he stands puzzled in mid-stream.

Contiguous Talkers.

Mrs. Radcliffe, in *The Romance of the Forest*, illustrates this point well. One of her characters rushes into the room with very important news, which his master is eager to hear :

"Oh, sir, I've heard something that has astonished me, as well it may," cried Peter, "and so it will you, when you come to know it. As I was standing in the blacksmith's shop, while the smith was driving a nail into the horse's shoe—by the by, the horse lost it in an odd way. I'll tell you, sir, how it was."

"Nay, prithee, leave it till another time, and go on with your story."

"Why then, sir, as I was standing in the blacksmith's shop, comes in a man with a pipe in his mouth, and a large pouch of tobacco in his hand."

"Well—what has the pipe to do with the story?"

"Nay, sir, you put me out; I can't go on unless you let me tell it in my own way. As I was saying—with a pipe," etc.

This narrative sets forth the evils of a memory which is solely contiguous: but we cannot argue that therefore contiguity is a drawback. Indeed, it is a law of thinking, and it is only a disadvantage when it is made to do more than its share of brain work. As a method of memorising its services are exceedingly valuable, proof of which will be evident as this course of study advances.

The Law of Similarity.

31. The second law is the *law of similarity*, which is defined by Bain as, "Present actions, sensations, thought or emotions tend to revive their like among precisely recurring circumstances." Here is an illustration. If I think of W. E. Gladstone, I am led to think of other Prime Ministers, because Gladstone was a Prime Minister. If I talk about Julius Cæsar, I should probably think of Charlemagne, Napoleon, Wellington and other soldiers, because to think of one General suggests the names of other Generals. Thus the sequence of our ideas is governed in a measure by these two laws. We may say we think *what* we like, *when* we like, and *how* we like, but as a matter of fact we have not quite so much liberty as we

fancy we have; indeed, we cannot think consecutively without employing the laws of association.

The Law of Repetition.

There is a third law sometimes added to the two already dealt with : indeed some psychologists have formulated several more, but they are refinements or adaptations of contiguity and similarity rather than separate laws. The one we refer to as a possible third is the *law of repetition.* Its connection with the other two is stated thus : " Mental phenomena, similar, or often recurring together, recall each other ; *and the bond becomes stronger as the relation in consciousness recurs.*" Thus you may learn a certain group of facts, e.g., in spelling you learn when to aspirate the " h " and when not to aspirate it ; but if you do not *use* your knowledge and thus renew your acquaintance with it, you are apt to forget it. Consequently, the law of repetition is an important item in mind and memory development, indeed we may say that Datas owes much of his retentiveness to this law. He is continually going over the ground of historical events ; and as the questions from his audience take him from B.C. 500 to A.D. 1815 in one leap, and range, comet-like, through the centuries, it is obvious he is strengthening his memory of facts by repetition.

SPECIAL EXERCISES FOR MIND TRAINING AND HEALTH

By EUSTACE MILES, M.A.

The exercises prepared by Mr. Miles will suit the requirements of the majority of students, but where exercises of a special character, and advice as to diet and matters of a confidential nature are concerned, the Secretary of the Pelman Institute will give an introduction to Mr. Miles, who has consented to treat all Pelman students at special fees.

Third Lesson

Before you begin to do any exercises, recall the four advantages already put forward. A good time to do this is while you are dressing. And then, again, you might recall them while you are undressing in the evening. There is nothing like going through important motives if you wish to keep up practices regularly.

I can here enlarge a little on the results of the right exercises on Health and Fitness, in several important respects.

The right exercises, and especially the deep and full breathing, help the whole body by bringing into it more oxygen—that wonderful, vitalising element—and getting rid of more carbonic acid gas and other waste-products.

Mr. Auberon Herbert, in an interesting leaflet, points out how many waste-products there are that poison the system when not properly eliminated by the exhaling of the breath.

Then, the right kind of exercise frees the skin. This applies not only to the skin-drill, but also to all sorts of exercise.

It is not simply the perspiration that comes out; there comes out also what has been called "transpiration," by which subtler but none the less injurious waste-matter is being eliminated. This relieves the kidneys, which are the over-taxed and weak spot in so many constitutions.

The right exercise obviously improves the circulation, and thus relieves the heart of some of its hardest work.

It is not merely a matter of curing cold hands and feet: it is a matter also of emptying the clogged muscles and blood channels. The kind of exercise suggested in this little Course helps largely in this direction.

I—In Bed.

Practise the abdominal breathing as before (Exercise II., Lesson I.), lying flat on your back, and with your two hands over your abdomen. First, as before, send your abdomen out as you breathe in, and draw your abdomen in as you breathe out.

Then practise the muscular breathing. Send your abdomen out as you breathe in, hold the breath in, and, while you hold it in, move the muscles of your abdomen in and out alternately, helping by pressure of the hands. This will tend to make the blood circulate through the lungs.

As a third exercise, breathe in as before, sending the abdomen out; then, keep the shoulders well back and down, draw the abdomen in, and press it in, and keep it pressed in. This will send the air up to the apex of the lungs, where consumption so often starts.

Now sit up in bed, and go through some neck-exercises.

Sit perfectly straight, not letting one shoulder be higher than the other. Keep the shoulders well back and down, so as to help to send the chest forward. Let the body be inclined slightly forward from the hips. First, look straight up above you as if there were something on the ceiling right above your head;

do not strain, yet go back a good way. This will stretch the front muscles of the neck. Then, do not come forward yet completely, but first draw the chin in and back; then let the top of the head come forward. Still keep the chin in, and make sure that the small of the back is hollow, and the shoulders back and down; turn your head to the right as far as it will go without strain; then to the left as far as it will go without strain. This movement, like all head-movements at the start, should be slow and deliberate. Then go through a similar movement, turning to the right, and make a bow to an imaginary person; and do this to the left afterwards.

Last of all, keeping the head forward, rotate the head up to the right; then to the left, still up; then down to the left; then to the right, still down. Do this a few times. Then reverse the direction. Let the movement be thorough, but without strain, and just short of being painful.

The practice of neck-exercises is of importance for several reasons. First, there is the improvement in the carriage. Then there is the effect of drawing the organs of the body up to a better position. If, when you are looking up above you with your head thrown back, you force your chin up and back, you will feel that your organs are being drawn up. One of the chief faults to-day, and the chief causes of trouble, is that the organs, including the stomach and liver, have sagged down too low, upsetting the whole functioning of the body.

II.—Out of Bed.

Stand up, with the feet comfortably apart, and the body evenly balanced on the two feet, not on the heels, but rather on the balls and toes of the feet. Keep your left arm limp and relaxed by your side. Stretch your right arm up right in front of you, having the fingers extended as widely apart from one another and stretched as far back as they will go. Bring that hand up and back above your head, as far back as it will go, with the

palm facing forwards. Hold it thus for a moment, with the arm stiff. Then rotate the fingers, which are also stiff, as far as they will go back to the right; pause there; then rotate them as far as they will go forward and towards the left.

Then, keeping the knees stiff, and not bending the legs, bring that hand and stiff arm down in front of you, bend your body down from the hips, and try to touch the floor just to the right of your right foot.

Be sure not to let your head poke forward. You must keep your head with the chin well in all the time; that is where the difficulty comes. Do not strain. Repeat the exercise a few times, and you will find that you will soon come down much further and much more easily. Then shake out that right hand, relax it, and keep it limp. And do a similar exercise with the left hand instead. Then shake out that left hand, and go through the exercise with the two hands together, each hand coming down outside the corresponding foot.

So far, I have said nothing about helps to health apart from certain exercises, and their advantages.

Now, however, it will be useful if you consider for a minute the importance of diet. It has been asserted that we are what we eat. This is not true; but we are certainly influenced by what we eat; yet most of us go on eating and drinking, just as they did years ago, and just as their fathers and grandfathers did—people who led a far more active life physically in the open air, and who had far less brain-work and nerve-strain. I am firmly convinced that most people diet altogether wrongly. It is not merely a matter of eating too much meat. It is a matter also of eating too much of what we can call the fuel-foods, the foods that chiefly serve to provide energy for the muscles. If we have not a vast amount of muscle-work in the open air, we are unlikely to be able to use up these fuel-foods.

I am tired of hearing people say, "We all eat too much." It is one of those loose phrases that shows a want of thought. It is not every element in food of which we eat too much. We eat far too little of the natural 'salts'—soda, lime, iron, etc.—which are in good green vegetables. These 'salts' are not foods in the sense of building the body and repairing its waste. They are not proteid foods. But they help to keep the blood healthy.

There is no space here to enlarge upon diet, but I shall be glad to offer any reader a little free advice about some of the best foods to take, and some of the foods to avoid, or to take in moderation; and the advice will include a few notes as to the importance of sipping water, especially first thing in the morning, and last thing at night, and before, rather than during or after meals.

In the fourth lesson there will be further exercises; hints on diet, etc.

PELMAN LESSON IV.

The next lesson will make clear the fundamental basis of memory training; how we remember by the laws of mental connection.

In sending in the Work Sheets, write your name and address legibly, and add your registered number.

These Text Books are for students only, and must not be shown or lent to anyone. They should be retained by the Student.